USSR

BOGACHEV, V. M., et al., _Radiotekhnika_ Vol 27, No 1, 1972, pp 36-44

to significant broadening of the potential instability region. In the investi-
gated instability zone, parasitic oscillations can occur only by the equivalent
circuit of the inductive Hartley oscillator circuit. Consideration of additional
factors (for example, the inductance of the emitter output and the collector
current delay relative to the voltage at the emitter junction) can lead not only
to significant deformation of the investigated region but also to the occurrence
of a second region of instability.

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USSR   UDC: 621.376.32

BOGACHEV, V. M., LAUT, L. N.

"Maximum Frequency Deviation in One-Tank FM Signal Oscillators With Varicaps"

Translation: Conditions are found for obtaining the maximum frequency deviation in two groups of FM signal oscillator circuits with varicaps. In solving the problem, it is assumed that the maximum permissible voltage of the varicap is known as well as the amplitude of the oscillatory voltage on the tank. Some recommendations are given on calculating frequency modulators for the proposed oscillator groups. The term "frequency modulation" is understood in this paper in its broadest sense, i. e. the term covers frequency modulation proper, frequency sweep, frequency tuning, etc. Six illustrations, bibliography of five titles. Resumé.

1/1

UDC 621.382.3.017.71

USSR

BOGACHEV, V.M., MUSYAKOV, M.I.

"Dependence On Temperature Of The Parameters Of Equivalent Circuits For Drift Transistors"

V sb. Dokl. nauchno-tekhn. Konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ in-t, 1970 g. Sekts. Radiotekhnicheskaya. Podsekts. Obshch. radiotekhniki (Report Of The Scientific-Technical Conference On The Results Of Scientific-Research Work During 1968-1969. Moscow Power Engineering Institute, 1970. Radio Engineering Section, General Radio Technology Subsection -- Collection Of Works), Moscow, 1970, pp 101-111 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6320?)

Translation: The paper theoretically analyzes the effect of temperature on the cut-off frequency of drift transistors, the basic parameters of equivalent circuits, and the resistance of the base. For a p-n-p type transistor, the average coefficients of diffusion are found by a solution of integral equations, making it possible to take into account the effect of a field and the instability of mobility on the parameters of the transistor. Taking account of the thermal scattering in the semiconductor, the temperature dependence is introduced of the average coefficient of diffusion at different values of the field. The magnitude of the transmission coefficient of the emitter current α_0 is determined as well as the transfer coefficient β_0

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USSR

BOGACHEV, V.M., et al. Dokl. nauchno-tekhn. konferentsii...Moscow,1970, pp 101-111

and the effectivness of the emitter γ_0. A family of temperature curves is constructed according to computed formulas, for the coefficient of diffusion of a Ge p-n-p and Si n-p-n transistor with various factors of the field and concentrations of the impurities. The relations $\beta_0^*(T)$ and $\gamma_0(T)$ for types of transistors are found, taking account of the exponential distribution of impurities in the base. 3 ill. 2 tab. 4 ref. V.M.

2/2

USSR   UDC 621.382.3

BOGACHEV, V.M., VOLKOV, M.V.

"Equivalent Circuits For A Transistor With A Ring-Shaped Emitter"

V sb. Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969
gg. Mosck. energ. in-t, 1970 g. Sekts. Radiotekhnicheskaya. Podsekts. Obshch. radio-
tekhniki (Report Of The Scientific-Technical Conference On The Results of Scientific-
Research Work During 1968-1969. Moscow Power Engineering Institute, 1970. Radio
Engineering Section, General Radio Technology Subsection--Collection Of Works),
Moscow, 1970, pp 90-100 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970,
Abstract No 6B205)

Translation: During an analysis of a distributed model transistor with a ring-shap-
ed emitter, three regions are defined: active, passive, and peripheral. The analysis
is performed with the following assumptions: 1)The exterior surfaces of the emitter
and collector junctions and also the interfaces between the active, passive, and
peripheral regions are considered equipotential; 2) The flow of charge carriers is
assumed to be two-dimensional; 3) The edge effects and the irregularity of direct
current density along the junction are not taken into account. These assumptions
made it possible to consider each of the regions defined as an independent long line,
and the overall equivalent circuit of a transistor describes their series-parallel
1/2

USSR

BOGACHEV, V.M., et al. Dokl. nauchno-tekhn konferentsii...Moscow, 1970, pp 90-100

connection. As a result of the analysis, equivalent circuits are obtained for a two-dimensional model of a transistor with a ring-shaped emitter and two types of lead outs for the base-- exterior and central. The frequency relations of the parameters of these circuits as quadripoles are entirely identical, and consequently precise conversion of one circuit to another is possible. One of the circuits is preferable during computation in a system of h- and z-parameters; the other during use of the Y-parameters. 2 ill. 6 ref. V.R.

2/2

- 72 -

UDC: 535.31;535.8

USSR

BOGACHEV, YU. V.

"Apochromatic Correction in the Infrared Area of the Spectrum"

Tr. Mosk. Vyssh. Tekhn. Uch-Shcha Im N. E. Baumana [Works of Moscow Higher
Technical School Imini N. E. Bauman], No. 135, 1970, pp 52-61, (Translated
from Referativnyy Zhurnal Fizika, No. 8, 1970, Abstract #8D1240, by A. V.
Lenskiy).

Translation: The conditions of various types of chromatic corrections of
thin optical components of two and three elements are studied. For the
spectral area from 1.8 to 3.5 μ the values of the Abbe numbers ($\lambda_0 = 2.6$ μ)
and relative partial dispersions (2.2-3.5 and 3.0-3.5 μ) of 21 optical
materials are shown on three diagrams, combined usage of which facilitates
the selection of combinations of materials best suited for achievement of
so-called superachromatic correction. An example is presented.

1/1

1/2   029   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF ALLOYING ELEMENTS ON THE SPECIFIC ELECTRIC RESISTANCE OF
   IRON MANGANESE AUSTENITE DURING ANTIFERROMAGNETIC TRANSFORMATION -U-
AUTHOR-(03)-BOGACHEV, I.N., YEGOLAYEV, V.F., EFROS, B.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(2), 424-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

CIRC ACCESSION NO--AP0129588
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF NI, CR, AND SI ON
  THE ANTIFERROMAGNETIC TRANSFORMATION OF FE-MN AUSTENITE WAS STUDIED,
  USING THE G40 (40PERCENT MN) ALLOYS AS AN EXAMPLE, BY THE ELEC.
  RESISTANCE METHOD. THESE ELEMENTS LOWER THE NEEL POINT AND AFFECT THE
  ANOMALIES IN THE SP. RESISTANCE IN THE TRANSFORMATION. THE RESISTANCE
  WAS DETD. AT 77-800DEGREESK FOR ALLOYS CONTG. 4-10PERCENT BY WT. NI,
  2.0-10.3PERCENT CR, OR 0.12-2.00PERCENT SI. THE RELATIVE CHANGE IN THE
  RESISTANCE BECAUSE OF THE ANTIFERROMAGNETIC ORDERING IS CHARACTERIZED BY
  GREATEST EFFECTS; THIS IS ATTRIBUTED TO A DECREASE IN THE EFFECTIVE NO.
  OF CONDUCTION ELECTRONS.   FACILITY: URAL. POLITEKH. INST. IM.
  KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

Analysis and Testing

USSR   UDC 620.19:539.376

BOGACHEV, I. N., VEKSLER, YU. G., and SOROKIN, V. G., Ural Polytechnical Institute

"Short-Lived Creep of Metals and Alloys under Aerodynamic Heating"

Moscow, IVUZ Chernaya Metallurgiya, No 4, 1970, pp 142-147

Translation: A description is given of short-lived creep tests on metals and
alloys under conditions of dynamic contact with high-speed air flows. A device was
used which permitted the tests to be conducted in a broad range of temperatures
and loads. Short-lived creep testing of nickel, cobalt, armco iron, alloys CT-4,
VZh-98, and El43B, and steel Khl8N9T in the temperature interval from 500 to 1000°C
shows that the characteristics of creep during tests in high-speed air flows differ
considerably from analogous characteristics obtained under static conditions. Their
changes are related to the thermal and corrosion-erosion action of the flow as well
as to varying stresses which originate in the sample under the effect of aero-
dynamic forces.

1/1

USSR

UDC 669.24:620.17

BOGACHEV, I. N., VEKSLER, YU. G., SEGAL', V. M., and SOROKIN, V. G., Ural Polytechnical Institute imeni S. M. Kirov

"Mechanism of Deformation of Nickel Surface in High-Velocity Air Stream"

Abstract: A study is made of the fine structure of nickel tested on an aerodynamic device at an air flow velocity of 1.6 M in a broad range of temperatures and testing times. At low testing temperatures, a considerable increase in the density of imperfections of the crystal lattice is observed, and grain crushing takes place on the surface of the specimen. The structure contains a large quantity of erosion pittings, and deformations, according to the shape of the slip trace, occur nonuniformly in the metal. With an increase in the testing temperature, the material hardens primarily because of intensive breaking down of grains, and with an increase in the time of dynamic recovery takes place which may lead to a recovery of the deformed material. An increased testing temperature is followed by a high rate of recovery and by a recrystallization of the deformed layer. A qualitative model of the flow of the processes of hardening-recovery in the surface layers of nickel during its deformation in a high-speed air stream is presented. The authors thank R. S. Shklyar for valuable discussion of the results of the work.
1/1

TITLE--CONCENTRATION DEPENDENCE OF PHYSICAL PROPERTY ANOMALIES DURING
   ANTIFERROMAGNETIC TRANSFORMATION IN IRON MANGANESE ALLOYS -U-

AUTHOR-(03)-BOGACHEV, I.N., YEGOLAYEV, V.F., FROLOVA, T.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(2), 358-63

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PHYSICAL PROPERTY, MANGANESE ALLOY, AUSTENITE, FERROMAGNETIC
   MATERIAL, ANTIFERROMAGNETIC MATERIAL, NEEL TEMPERATURE, ELASTIC MODULUS,
   MAGNETIC STRUCTURE, INTERNAL FRICTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0935   STEP NO--UR/0126/70/029/002/0358/0363

CIRC ACCESSION NO--AP0121537
                    UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0121537

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE ANOMALIES WERE STUDIED DURING
THE ANTIFERROMAGNETIC TRANSFORMATION INTO AUSTENITE FOR ALLOYS CONTG.
14-38PERCENT BY WT. MN. THE ALLOYS CONTG. LESS THAN 27PERCENT BY WT. MN
WERE SUBJECTED TO STABILIZING TREATMENT TO AVOID THE EFFECT OF THE
EPSILON PHASE ON THE TEMP. DEPENDENCE. AS THE MN CONCN. DECREASES, THE
ANOMALIES IN THE NORMAL ELASTIC MODULUS, THE INTERNAL FRACTION, AND THE
COEFF. OF LINEAR EXPANSION AT THE NEEL POINT INCREASE. THIS IS
APPARENTLY RELATED TO THE COMPLEX MAGNETIC STRUCTURE OF THE AUSTENITE:
THE SUPERPOSITION OF THE CLOSE RANGE FERROMAGNETIC INTERACTION ON THE
LONG RANGE ANTIFERROMAGNETIC ORDER. THIS IS CONFIRMED BY THE APPROX.
COINCIDENCE IN THE CRIT. CONCNS. FOR THE MN, AT WHICH FERROMAGNETIC
INTERACTION BETWEEN THE MN ATOMS BECOMES POSSIBLE AND ANOMALIES IN THE
PHYS. PROPERTIES DEVELOP.   FACILITY: URAL. POLITEKH. INST. IM.
KIROVA, SVERDLOVSK, USSR. .

UNCLASSIFIED

USSR   UDC 669.15.24.74:539.379

BOGACHEV, I. N., CHUMAKOVA, L. D., and SHKLYAR, R. Sh.,
Sverdlovsk

"Change of the Substructure of Manganese and Nickel Austenitic
Alloys in the Process of Micro-Impact Effect"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73,
pp 164-169

Abstract: A study by the method of diffraction microroentgeno-
graphy was made of structural changes on micro-impact loading
arising in austenitic alloys on Fe-Ni and Fe-Mn bases, in order
to explain the causes of their different behavior. Observed chan-
ges in specimens, 10 x 10 x 10 mm, of stable G38 and N40 alloys, sub-
jected to micro-impact action on a magnetostrictive vibrator, are
discussed by reference to microroentgenograms and diagrams showing
the changes of the average size of fragments and of the average
angle of disorientation of subgrains of these alloys. Annealing
at 1200 °C was found to produce a nonuniform structure in Ni and
Mn austenites. An intensive size reduction of fragments and an

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USSR

BOGACHEV, I. N., et al., Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 164-169

increasing angle of disorientation on micro-impact action is characteristic for austenitic Ni. A more gradual change of these parameters is observed on austenitic Mn. The hardening and the resistance to micro-impact loads of stable austenitic alloys depend on the degree of disorientation, the dimensions of substructural components, and the kinetics of their change in the process of deformation. Five figures, seven bibliographic references.

Microelectronics

BOGACHEV, M. P., BAZAITOV, V. F., KUZNETSOV, N. V., LYUBIMOV, A. I.,
MIKHAYLOV, N. A., NESTERENKO, Yu. F., PODOL'SKAYA, T. I., FROLOVA, I. S.,
KHVOSTOV, V. I.

"A Multilayered Printed Circuit Board"

Translation: A multilayered printed circuit board is proposed in which
sections of foil which are a continuation of printed conductors entering
holes in the board are used as leads from layer to layer. To cut down on
the number of transitional connecting elements and to produce contact
areas, the above-mentioned leads are fastened to the outer layer of the
printed circuit board and used as contact areas for unsoldering circuit
elements and wiring leads.

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USSR   UDC: 621.396.6-181.5(088.8)

GAVRILOV, R. A., REPIN, V. V., ALEKHIN, M. I., BOGACHEV, N. M.

"A Device for Transport and Registration of Substrates and Masks"

USSR Author's Certificate No 268523, filed 27 May 68, published 14 Aug 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V243 P)

Translation: A device is proposed for transport and registration of masks
and substrates for making thin-film microcircuits. The device contains
substrate holders and mask holders which are connected to the drive mecha-
nism and located on transporting discs. The holders are equipped with
centering mechanisms such as pins and sockets, and with heating and cooling
elements. To simplify the design of the device and improve the quality
of the microcircuits, the mask holder is made in the form of a conical
rectangular base with its beveled surfaces resting on the socket of the
transporting disc, which is equipped with spring-loaded fingers. The upper
face of the substrate holder rests on stationary supports on the transport
disc socket, which is also fitted with spring-loaded fingers.

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USSR   UDC 621.373.52.016.35

BOGACHEV, V. M., NIKIFOROV, V. V., Active Members of the Scientific and Tech-
nical Society of Radio Engineering, Electronics and Communications imeni A. S.
Popov

"Parasitic Oscillations in Oscillators with External Excitation Caused by In-
ternal Feedback in the Transistor"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 36-44

Abstract: A study was made of the frequency dependence of the stability co-
efficient of a cascade with a common emitter. The boundaries of the potential
instability and the boundaries of the equivalent reactive parameter fields were
determined for which the occurrence of parasitic oscillations is possible.
Recommendations are made with respect to selecting the circuit parameters in-
suring stable operation of the oscillator. An analysis of the potential in-
stability of the transistor was performed for reactive external leads, the
region of instability was described for complex transistor loads, and the equi-
valent circuit of a parasitic autooscillator was developed. The expressions
obtained permit determination of the stability coefficient, the boundaries of
the instability zone and the conditions of its degeneration considering the
spurious coupling through the active and passive capacitances of the collector
junction and the current cutoff. The presence of the last two factors leads
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USSR

to significant broadening of the potential instability region. In the investi-
gated instability zone, parasitic oscillations can occur only by the equivalent
circuit of the inductive Hartley oscillator circuit. Consideration of additional
factors (for example, the inductance of the emitter output and the collector
current delay relative to the voltage at the emitter junction) can lead not only
to significant deformation of the investigated region but also to the occurrence
of a second region of instability.

2/2

USSR   UDC: 621.376.32

BOGACHEV, V. M., LAUT, L. N.

"Maximum Frequency Deviation in One-Tank FM Signal Oscillators With Varicaps"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology—collection of works), vyp. 7, Moscow, "Svyaz'", 1971, pp 22-35 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D314)

Translation: Conditions are found for obtaining the maximum frequency deviation in two groups of FM signal oscillator circuits with varicaps. In solving the problem, it is assumed that the maximum permissible voltage of the varicap is known as well as the amplitude of the oscillatory voltage on the tank. Some recommendations are given on calculating frequency modulators for the proposed oscillator groups. The term "frequency modulation" is understood in this paper in its broadest sense, i. e. the term covers frequency modulation proper, frequency sweep, frequency tuning, etc. Six illustrations, bibliography of five titles. Resumé.

1/1

USSR   UDC 621.382.3.017.71

BOGACHEV, V.M., MUSYANOV, M.I.

"Dependence On Temperature Of The Parameters Of Equivalent Circuits For Drift Trans-
istors"

V sb. Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969
gg. Mosk. energ in-t, 1970 g. Sekts. Radiotekhnicheskaya. Podsekts. Obshch. radio-
tekhniki (Report Of The Scientific-Technical Conference On The Results Of Scientific-
Research Work During 1968-1969. Moscow Power Engineering Institute, 1970. Radio
Engineering Section, General Radio Technology Subsection -- Collection Of Works),
Moscow, 1970, pp 101-111 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970,
Abstract No 6302)

Translation: The paper theoretically analyzes the effect of temperature on the cut-
off frequency of drift transistors, the basic parameters of equivalent circuits, and
the resistance of the base. For a p-n-p type transistor, the average coefficients of
diffusion are found by a solution of integral equations, making it possible to take
into account the effect of a field and the instability of mobility on the parameters
of the transistor. Taking account of the thermal scattering in the semiconductor,
the temperature dependence is introduced of the average coefficient of diffusion at
different values of the field. The magnitude of the transmission coefficient of the
emitter current α_0 is determined as well as the transfer coefficient β_0^*
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                                    - 73 -

USSR

BOGACHEV, V.M., et al. Dokl. nauchno-tekhn. konferentsii...Mosc..,1970, pp 101-111

and the effectivness of the emitter γ_0. A family of temperature curves is constructed according to computed formulas, for the coefficient of diffusion of a Ge p-n-p and Si n-p-n transistor with various factors of the field and concentrations of the impurities. The relations $\beta_0^*(T)$ and $\gamma_0(T)$ for types of transistors are found, taking account of the exponential distribution of impurities in the base. 5 ill. 2 tab. 4 ref. V.K.

2/2

USSR

BOGACHEV, V.M., VOLKOV, M.V.

UDC 621.382.3

"Equivalent Circuits For A Transistor With A Ring-Shaped Emitter"

V sb. Dokl. nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970 g. Sekts. Radiotekhnicheskaya. Podsekts. Obshch. radio-tekhniki (Report Of The Scientific-Technical Conference On The Results Of Scientific-Research Work During 1968-1969. Moscow Power Engineering Institute, 1970. Radio Engineering Section, General Radio Technology Subsection--Collection Of Works), Moscow, 1970, pp 90-100 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6B206)

Translation: During an analysis of a distributed model transistor with a ring-shaped emitter, three regions are defined: active, passive, and peripheral. The analysis is performed with the following assumptions: 1) The exterior surfaces of the emitter and collector junctions and also the interfaces between the active, passive, and peripheral regions are considered equipotential; 2) The flow of charge carriers is assumed to be two-dimensional; 3) The edge effects and the irregularity of direct current density along the junction are not taken into account. These assumptions made it possible to consider each of the regions defined as an independent long line, and the overall equivalent circuit of a transistor describes their series-parallel

1/2

USSR

ROGACHEV, V.M., et al. Dokl. nauchno-tekhn konferentsii...Moscow, 1970, pp 90-100

connection. As a result of the analysis, equivalent circuits are obtained for a
two-dimensional model of a transistor with a ring-shaped emitter and two types of
lead outs for the base-- exterior and central. The frequency relations of the par-
ameters of these circuits as quadripoles are entirely identical, and consequently
precise conversion of one circuit to another is possible. One of the circuits is
preferable during computation in a system of h- and z-parameters; the other during
use of the Y-parameters. 2 ill. 6 ref. V.R.

USSR   ·UDC: 535.31;535.8

BOGACHEV, YU. V.

"Apochromatic Correction in the Infrared Area of the Spectrum"

Tr. Mosk. Vyssh. Tekhn. Uch-Shcha Im N. E. Baumana [Works of Moscow Higher
Technical School Imini N. E. Bauman], No. 135, 1970, pp 52-61, (Translated
from Referativnyy Zhurnal Fizika, No. 8, 1970, Abstract #8D1240, by A. V.
Lenskiy).

Translation: The conditions of various types of chromatic corrections of
thin optical components of two and three elements are studied. For the
spectral area from 1.8 to 3.5 μ the values of the Abbe numbers (λ_0 = 2.6 μ)
and relative partial dispersions (2.2-3.5 and 3.0-3.5 μ) of 21 optical
materials are shown on three diagrams, combined usage of which facilitates
the selection of combinations of materials best suited for achievement of
so-called superachromatic correction. An example is presented.

BOGACHEVA, G. N.

UDC 669.017.3:620.186.5

STRUCTURAL RECRYSTALLIZATION OF STEELS DURING FAST AND SLOW HEATING

G. N. Bogacheva, V. P. Druzd, A. V. Orlhganov, Y. M. Schastlivtsev, and Y. M. Umova, Institute of the Physics of Metals, UNTs of the USSR Academy of Sciences, submitted to press 1 February 1972   pages 1198-1205

The effect of small additions of elements forming carbides that are nearly insoluble, the temperature of preliminary hardening, tempering after hardening, and soaking at various temperatures in the austenite region on the structural mechanism of the recrystallization of steel during heating, accomplished with various speeds, was investigated. It was demonstrated that the factors indicated do not have the same effect on the manifestation of the structural succession, expressed in the restoration of the initial grains of austenite after completion of the phase transformation in fast heating (200--400° per second) and slow heating (1--2° per minute). In connection with this it is proposed that there are two cases of structural succession are caused by different mechanisms of the formation of austenite.

At definite heating conditions of a preliminarily superheated and hardened steel, the phenomenon of structural succession is observed, which lies in the presence of a crystallographic bond of the grains of austenite formed after completion of the phase transformation with the initial grains of austenite, which existed before the first hardening. The structural succession is manifested most sharply at very fast or at very slow heating of the hardened steel: in both cases, a restoration of the initial grains of austenite occurs with respect to magnitude and with respect to crystallographic orientation [1--3].

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In reference [4] the assumption was expressed that the phenomenon of structural succession is caused by the well-ordered mechanism of the formation of austenite: in fact heating a diffusionless mechanism is realized, and in slow heating the so-called homogeneous mechanism of diffusion formation of austenite. However, according to [4], for the majority of the steels investigated at the speeds of heating that can be accomplished in practice, the formation of austenite occurs by the diffusion mechanism. This conclusion, in essence, presumes the identity of restoration mechanisms of the grain in both cases. It is of interest to analyze the effect of various factors on the appearance of the structural sequence in fast and slow heating and, if their effect is unambiguous, according to [4], we may assume that these two cases of structural sequence are caused, all the same, by various mechanisms of the formation of austenite.

In this article the effect of the chemical composition, preliminary hardening temperature, tempering after preliminary hardening, and the regimes of annealing in the austenite region before preliminary hardening on the structure picture of the recrystallization in repeated heating of the hardened steel.

Industrial steels were investigated, the composition of which is indicated in the table. Some experiments were conducted on steels with an increased content of carbon. Repeated heating after preliminary hardening was accomplished at rates of 1--$2°$ per minute (slow heating) and 200--$400°$ per second (fast heating). Since the results of x-ray structural and metallographic methods in this case agree well [6, 7], only the metallographic method was used.

B   Steels

USSR

LISOGOR, A. I., _____ and _____, _____
Inorganic Ch_____, _____, _____ of Sciences Ukrain___

"Investigation __ the _____ Properties of Stainl___ St___
Cerium and Zirconium"

Kiev, Ukrains_iy Khimicheskiy Zhurnal, Vol 3_, No _, ___ 7_, __ ____

Abstract: A potentiodynamic method was used to study the _____ ___ _____
cation of stainless steels _f zirconium and cerium on ___ _____ _____ ____
properties in solutions of hydrochloric and nitric ____, ___ __ _____ ___
with hydrofluoric acid ____ as seen _____ __ _____.
effects of the _____ ___ _____ ___ _____ __ ___ _____ _____ __
steel and the nature of ____ _____ _____. In _____ __ ___
a slight positive effect __ ___ corrosion resistance __ _____ ___ ___
steels to_ ___ __ ____, cerium ___ ___ addition __ _____
beneficial, _____ __ ___ corrosion _____ __ _____ ___
acid and in a _____ __ _____ ___ __ ____ ___ ___ __
the stability of the passive state in all grades of _____.

1/1

TITLE--RESISTANCE TO SAPONIFICATION OF SULFOSUCCINIC ACID MONOESTER   SALTS
   IN THE PRESENCE OF MAGNESIUM IONS -U-

AUTHOR-(04)-REZNIKOV, I.G., BAVIKA, V.I., BOGACHEVA, S.F., POBORTSEVA,
   L.A.

CCUNTRY OF INFC--USSR

B

SOURCE--MASLO-ZHIR. PROM. 1970, 36(1), 20-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--SAPONIFICATION, ORGANIC SULFUR COMPOUND, SUCCINIC ACID,
   MAGNESIUM SULFATE, CALCIUM COMPOUND, COPPER COMPOUND, DETERGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0518   STEP NO--UR/9085/70/036/001/0020/0023

CIRC ACCESSION NO--AP0107123
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0107123
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESISTANCE TO SAPON. OF
  SULFOSUCCINIC ACID MONOESTERS IN AN ALK. MEDIUM IS GREATLY INCREASED BY
  ADDN. OF MG, CA, OR CU SALTS. IN COMPNS. CONTG. 12.5PERCENT ACTIVE
  SUBSTANCE PARENTHESIS DI-NA SALT OF MONOALKYL SUCCINATE (ALKYL DERIVED
  FROM SPERMACETI ALC.) (I) PARENTHESIS, 20PERCENT NA POLYPHOSPHATE,
  1PERCENT NA SILICATE, 12-15PERCENT NA SUB2 SO SUB4, REST H SUB2 O, A
  PART OF NA SUB2 SO SUB4 WAS REPLACED BY 4-8PERCENT MGSO SUB4. SAPON. OF
  I IN SUCH A DETERGENT IN AN ALK. MEDIUM WAS 80-6PERCENT LESS THAN A
  DETERGENT NOT CONTG. MGSO SUB4. CA AND CU SALTS HAD A SIMILAR ACTION.
  WASHING EXPTS. WITH I ALONE AND WITH 8PERCENT MGSO SUB4 HAD 122 AND
  130PERCENT, RESP., OF THE DETERGENT EFFICIENCY OF NA LAURYL SULFATE.

UNCLASSIFIED

AAO049387

UR 0482

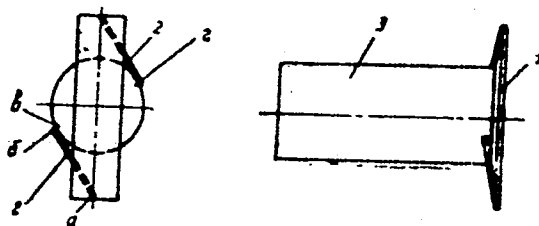Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

240874 ELECTROMECHANICAL FILTER is simplified
and made smaller. Longitudinal oscillation
converter 1 is coupled to resonator 3 by ties 2
by which the push-pull effects of the converter
brings about a rotational oscillation in the reson-
ator. The ends marked a of the ties are secured
to the converter and the ends marked b are joined
to diametrically opposite points (v.g.) of the
resonator. 9.12.67. as 1201984/26-9.
M.M. BOGACHIKHIN, Yu.N.MERKUSHKIN. (20.8.69.)
Bul.13/1.4.69. Class 21g. Int.Cl. HO3h.

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19801216

AA0049387

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2/2   19801217

USSR   UDC: [621.3.051.024:537.312.62]:621.3.016.34:681.3

BOGACHKOV, M. L., GLINTERNIK, S. R., Leningrad

"Relation Between Transient Processes and Control Conditions on the One
Hand and the Parameters of a Superconducting Cable in a DC Transmission
Line on the Other"

Abstract: The paper deals with the relation between the parameters of a
superconducting cable, transient processes in a DC line, and control con-
ditions to limit the maximum emergency currents in the case of inter-
terminal short circuits. An estimate is made of the effect of individual
parameters on the static stability of a controllable superconducting DC
electric power transmission line. The analysis shows that with the
existing cost of cryogenic materials and equipment, a nominal working
voltage of the order of 100 kV should be used in such a line. A reduc-
tion in voltage would make the cable more expensive, while an increase
would raise the cost of transforming equipment as well as increasing
overloads. In order to limit overloads during emergencies in the trans-
mission of direct current, a current regulator should be used which is

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USSR
BOGACHKOV, M. L., GLINTERNIK, S. R., Izv. AN SSSR: Energetika i Transport,
No 4, 1972, pp 14-20

based on a rectifier with channels for deviation and for the integral of
the current. In the case of disruptions in the operation of the channel
for the integral of the current when there is a short circuit in the DC
line, the rectified current attains a new value determined by the coef-
ficient of amplification with respect to deviation. When there is a
failure in the channel for deviation, the rectified current returns to
the initial value; this process takes place slowly since attenuation is
sharply reduced. In the case of disruptions in the operation of the
channels for deviation and for the integral of the current, the recti-
fied current gradually goes to the new steady-state value, which is quite
high since it is determined only by the resistance of the rectifier com-
mutation circuit. In designing a cryogenic cable for a DC transmission
line, the wave impedance of the cable must be maximized since this has a
favorable effect on transmission operating stability.

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USSR

BOGACHKOVA, B. I., Kazakh Scientific Research Institute of Regional Pathology, Ministry of Health, Kazakh SSR

"General and Allergic Reactivity of Brucellosis Patients. II. Phagocytosis and Glycogen Content of Leukocytes. III. General Immunobiological Reactivity"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 8, 1971, pp 25-27

Abstract: Study of 300 brucellosis patients showed that nonspecific phagocytic activity of leukocytes increases in brucellosis in parallel with specific phagocytic activity. At the same time, cytoplasm of the neutrophils becomes more saturated with glycogen. The more active the process, the higher these indexes. They are highest with normal allergic rearrangement of the body but very low when it is insufficiently or extremely sensitized. The Joffe skin test with antihuman serum (obtained by immunizing rabbits with human tissue homogenates) and the indexes of specific sensitization are useful in estimating the intensity of the pathological process. The test was negative or doubtful in only 6% of health persons examined compared with 44.8% of brucellosis patients. Doubtfuls and negatives were most frequent (54%) in those with decompensated or subcompensated forms of chronic brucellosis and much less common in those with acute and subacute forms (38.4%)
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TITLE--BEHAVIOR OF ETHYL ETHER ON PLATINIZED PLATINUM IN SULFURIC ACID
    SOLUTIONS -U-

AUTHOR-(02)-BOGANOVSKIY, G.A., SHAKKAK, A.I.

COUNTRY OF INFO--USSR

SOURCE--ELEKTRO-KHIMIYA 1970, 6(2), 290

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYL ETHER, PLATINUM ELECTRODE, OXIDATION, CHEMISORPTION,
    ELECTROLYTIC OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0032   STEP NO--UR/0364/70/006/002/0290/0290

CIRC ACCESSION NO--AP0114432
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0114432
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDN. OF ETHER UNDER STEADY
  STATE CONDITIONS IS RATHER INTENSE. THE AREAS OF OXIDN. ARE IN THE
  DOUBLE LAYER REGION OF THE POTENTIAL WITH THE POLARIZATION CURVE HAVING
  A SLOPE OF D SUBPHI TAU-DLOG I EQUAL 0.12V. THE ABSORBED O LAYER IS
  ACTIVE WITH REGARD TO ETHER. THE RATE OF INTERACTION WITH THE OXIDE
  FILM IS LOW. FOR ETHER THE FORMATION OF NONREDUCING CHEMISORBED
  PARTICLES IS CHARACTERISTIC. IF PT IS KEPT FOR 1 HR IN A N H SUB2 SO
  SUB4 SOLN. SATD. WITH ETHER WITH SUBSEQUENT REMOVAL OF ETHER, MULTIPLE
  WASHING OF THE ELECTRODE WITH NH SUB2 SO SUB4, PLOTTING OF THE CATHODIC
  AND ANODIC CURVES OF CHARGING, THE H AREAS OF THE CORRESPONDING CURVES
  ARE SHORTER THAN IN A SOLN. OF THE BACKGROUND. IT FOLLOWS FROM THE
  RATIO (QH PRIMER-QH PRIMEO)A PRIME EQUAL 0.7 THAT THE CHEMISORBED
  SUBSTANCE OCCUPIES 30PERCENT OF THE TOTAL NO. OF THE H PLACES. THE
  BLOCKING OF THE SURFACE IS DUE TO UNREDUCED CHEMISORBED HCO PARTICLES.
  THESE PARTICLES ARE PROBABLY FORMED BY INTERACTION OF WATER AND CH SUB3
  TIMES RADICALS CREATED IN THE DESTRUCTIVE DECOMPN. OF ETHER. THUS THE
  EFFECTS OF DEHYDRATION, HYDRATION, DECOMPN. IN THE C-C BONDS, BLOCKING
  OF THE SURFACE BY UNREDUCED HCO PARTICLES THAT WERE FOUND IN ALCS. AND
  HYDROCARBONS ARE ALSO CHARACTERISTIC FOR SUCH STABLE COMPDS. LIKE ETHER.
      FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC:621.793:661.862.2:533.9.666.763

BUDNIK, N. M., LYAKH, Yu. A., MESHCHERYAKOV, V. M., BOGATIKOV, Ye. N.,
TROITSKIY, V. K.

"Plasma Application of a Protective Coating of Aluminum Oxide on Refractory Materials"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 73, pp 16-17

Abstract: The Department of Welding of Rostov-na-Donu Institute of Agricultural Machine Building has designed and manufactured an experimental 17 kw plasma installation for application of protective aluminum oxide coatings to refractory materials. The new design increases the operating life of the anode nozzle to 20 hours. The influence of atomizing mode parameters on properties of the coatings produced is studied. A technology is developed for application of aluminum oxide to chamotte materials. Application of protective aluminum oxide coatings to the lining of steel teeming ladles by plasma atomization increases lining life by a factor of 2.

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Coatings

USSR

UDC 669.14:621.746.328

BUDNIK, N. M., LYAKH, Yu. A., MESHCHERYAKOV, V. M., TROITSKIY, V. N., BOGATIKOV, Ye. N., URINSON, A. I., and KHOKHLOV, V. M., Taganrog Metallurgical Plant; Rostov-on-Don Institute of Agricultural Machinery

"Increasing the Resistance of the Lining of Steel-Teeming Ladles"

Moscow, Metallurg, No 8, Aug 70, pp 31-33

Abstract: The resistance of the lining of steel-teeming ladles may be increased by heat-resistant protective coatings applied by the plasma method. The powder to be sprayed passes through a high-temperature zone (10,000-20,000°C) and strikes the surface in a plastic state. The powder particles, possessing high kinetic energy, sinter and form a homogeneous high-quality dense coating of adequate thickness. In most cases it is necessary to heat the surface. Aluminum oxide with a particle size of 80-100 microns was used as the protective coating. The technology of the plasma spraying of Al_2O_3 on chamotte brick is described and the technological parameters were determined. Maximum cohesive strength with the brick was obtained at a 0.4-0.6 mm coating thickness. The aluminum oxide coating applied by the plasma method appears to double the lining's resistance of steel-teeming ladles under service conditions. The yearly savings per 50-ton ladle at the Taganrog Metallurgical Plant amount to 2,650 rubles.
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1/3   027
UNCLASSIFIED
TITLE--SOLID SOLUTIONS IN THE PB SUB2 CDWO SUB6NEGATIVE "PB SUB2 DCMOO PROCESSING DATE--16OCT70
SUB6" SYSTEM -U-

AUTHOR--(03)-BELYAYEV, I.N., MEDVEDEVA, L.I., BOGATIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 597-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID SOLUTION, LEAD COMPOUND, CADMIUM COMPOUND, MOLYBDENUM,
CURIE POINT, SINTERED ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0829

STEP NO--UR/0363/70/006/003/0597/0598

CIRC ACCESSION NO--AP0118006

UNCLASSIFIED

CIRC ACCESSION NO--AP0118006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PBO-CDMOO SUB4 AND PB SUB2 CDWO SUB6-PBCDMOO SUB6 SYSTEMS WERE STUDIED. A COMPARISON OF INTERPLANAR SPACINGS OF SAMPLES OF THE PBO-CDMOO SUB4 SYSTEM AS OBTAINED FROM POWDER DIFFRACTION PATTERNS SHOWED THAT PB SUB2 CDMOO SUB6 DOES NOT FORM IN THAT SYSTEM. ALL COMPNS. HELD TO 400DEGREES WERE MIXTS. OF THE STARTING COMPONENTS. POWDER PATTERNS OF THE SAMPLE OF COMPN. OF 10PERCENT CDMOO SUB4 SHOWED THE PRESENCE OF A PHASE DIFFERENT FROM THE STARTING COMPONENTS, NAMELY THE PB SUB2-MOO SUB5 PHASE. THE SUBSTITUTION OF W BY MO IN THE COMPD. PB SUB2 CDWO SUB6 WAS ACCOMPLISHED BY SINTERING SAMPLES OF COMPN. PB SUB2 CD(W SUB1-X MO SUBX) O SUB6 (X EQUALS 0.05-0.95). THE SAMPLES WERE SINGLE PHASE WITHIN THE REGION TO X EQUALS 0.5. AT HIGHER X, PBO AND PBMOO SUB4 ALSO FORMED IN ADDN. TO THE LIMITED SOLID SOLNS. PB SUB2 CD (W SUB1-X MO SUBX) O SUB6. THE SOLID SOLNS. ARE STABLE TO 900DEGREES. IN VIEW OF THE CLOSENESS BETWEEN THE IONIC RADII FOR W PRIME6 POSITIVE AND MO PRIME6 POSITIVE, THE LATTICE PARAMETERS OF THE SOLID SOLNS. FO NOT DIFFER APPRECIABLY FROM THE PARAMETERS FOR PB SUB2 CDWO SUB6 AND ARE EQUAL TO A EQUALS C EQUALS 4.156, B EQUALS 4.074 ANGSTROM, AND BETA EQUALS 91DEGREESO PRIME. THE EXISTENCE OF SOILD SOLNS. IN THE 2PBO-CD(W SUB1-X MO SUBX)O SUB4 SYSTEM HAS BEEN CONFIRMED ALSO BY DTA DATA AS WELL AS BY THE MEASUREMENTS OF THE TEMP. DEPENDENCE OF PERMITTIVITY. THE PHASE TRANSFORMATION AT 402DEGREES WAS DETD. ON THE HEATING CURVE OF THE PURE PB SUB2 CDWO SUB6 SAMPLE.

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CIRC ACCESSION NO--AP0118006   PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--THE CURIE POINT DECREASES WITH INCREASING MO CONTENT IN
THE SOLID SOLNS.; FOR PB SUB2 COWO SUB6 IT IS 400DEGREES, AND FOR PB
SUB2 CD(W SUB0.9 MO SUB0.1)O SUB6 IS IT 392DEGREES.   FACILITY:
ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

1/2   028
UNCLASSIFIED
TITLE--ELECTRICAL PROPERTIES OF CRYSTALLITES AND THE INTERCRYSTALLITE
PROCESSING DATE--04DEC70
LAYER OF BARIUM TITANATE SEMICONDUCTOR CERAMICS -U-
AUTHOR-(02)-BOGATIN, A.S., PROKOPALO, O.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 96-100

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--MODEL, CRYSTAL STRUCTURE, CERAMIC MATERIAL, SEMICONDUCTOR
MATERIAL, BARIUM TITANATE CERAMIC, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1567
STEP NO--UR/0139/70/013/003/0096/0100
CIRC ACCESSION NO--AT0130479
UNCLASSIFIED

CIRC ACCESSION NO--AT0130479   UNCLASSIFIED   PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO SIMPLIFY THE MODEL OF THE POLYCRYST. STRUCTURE OF BATIO SUB3, DOPED WITH LANTHANIDES, AN EQUIV. ELEC. DIAGRAM WAS CONSTRUCTED. THE PERMITTIVITY AND RESISTIVITY OF CRYSTALLITES (EK, PK) AND OF THE INTERCRYSTALLITE LAYER (EP, PP) AND MEAN PERMITTIVITY AND RESISTIVITY (EO, PO) WERE CALCD. ON THE BASES OF DIFFERENTIAL MEASUREMENTS OF THE ACTIVE AND REACTIVE COMPLEX IMPEDANCE OF THE CERAMIC SAMPLE AT DIFFERENT FREQUENCIES. EP, EK, EO, PP, PK, AND PO WERE CALCD. IN DEPENDENCE ON TEMP. (0-350DEGREES) AND DIFFERENT MEAN CONCNS. OF CE (0.05-0.5PERCENT). PO DEPENDS ON PP ABOVE ALL. THE MIN. OF PK IS AT HIGHER CONCN. OF CE (SIMILAR TO 0.3PERCENT), THEN MIN. OF PP (CONCN. SIMILAR TO 0.1PERCENT). THE MAX. OF EK AND EO CORRESPOND WITH THE MIN. PK. ONLY EK HAS A TEMP. MAX.; EP IS SUPPRESSED.
FACILITY: ROSTOV.-NA-DONU GOSUNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

USSR

BOGATKO, V.I., KOLTON, G.A.

"Three-Dimensional Unsteady Motion of a Gas Behind the Front of a Strong Shock Wave"

Abstract: The known boundary-layer method, applied in previously published sources for the solution of unsteady unidimensional problems of gas dynamics, which is extensively used for solving steady problems of the flow of a hypersonic stream of gas about solids, is generalized in the present paper for three-dimensional unsteady problems. An investigation is made of the structure of an unsteady three-dimensional limiting gas flow. The motion of a wedge and a cone with a high variable speed is considered as an example. 2 figures, 5 bibliographic entries.

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1/2   029   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--SURFACE CONDUCTIVITY IN POLARIZED BARIUM METATITANATE CRYSTALS -U-

AUTHOR-(02)-BOGATKO, V.V., KOVTONYUK, N.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2) 605-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SURFACE PROPERTY, ELECTRICAL CONDUCTIVITY, METAL COATING,
   GERMANIUM, BARIUM TITANATE, FERROELECTRIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0128   STEP NO--UR/0181/70/012/002/0605/0606

CIRC ACCESSION NO--AP0054924
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0054924   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT WAS MADE TO OBSERVE EXPTL. INCREASED SURFACE ELEC. COND. IN SINGLE DOMAIN FERROELEC. CRYSTALS. EXPTS. WERE CARRIED OUT ON SINGLE CRYSTAL BATIO SUB3, SIMILAR TO 0.02 CM THICK, WITH AN AREA OF SIMILAR TO 0.3 CM PRIME2. THE PRESENCE OF THE ABOVE EFFECT WAS ESTABLISHED WHEN N GE WAS SPUTTERED ON A PURIFIED SURFACE OF BATIO SUB3. THE RESULTS ARE EXPLAINED IN 2 WAYS: (1) UNDER THE ACTION OF A MACROSCOPIC POLARIZATION FIELD OF BATIO SUB3, THE SURFACE COND. OF THE GE LAYER CHANGES, AND (2) A LAYER OF HIGH COND. FORMED AT THE CRYSTAL SURFACE SHIELDS THE COND. OF THE GE LAYER.

UNCLASSIFIED

USSR   UDC 615.781

CHERKASOVA, Ye. M., PRYANISHNIKOVA, N. T., BOGATKOV, S. V., and
YERKOMAYSHVILI, G. S., Moscow Institute of Fine Chemical Technology
imeni M. V. Lomonosov, Institute of Pharmacology and Chemotherapy,
Academy of Medical Sciences, USSR

"Advance in the Chemistry of Anesthetics (1961-1971 Decade)"

Moscow, Uspekhi Khimii, Vol 42, No 10, Oct 73, pp 1892-1919

Abstract: A review with 411 references covering the more important studies
on the chemistry of anesthetics in the past decade. Anesthetics represented
by various classes of organic compounds are discussed: esters of amino-
alcohols, aminoamides, aminoacid amides, aminoketones, and other mono-
functional representatives. The structure-activity relationship is stressed.
Considerable coverage is given to the literature data on the mechanism of
action.

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USSR

UDC 547.435 + 577.153.4

KUNDRYUTSKOVA, L. A., MIKHAYLOVA, N. A., SUKHOVA, I. YE.,
BOGATKOV, S. V., and CHERKASOVA, YE. M., Moscow Institute of Fine
Chemical Technology imeni M. V. Lomonosov

"Cholinesterase Inhibition by Some Amino Alcohol Esters"

Abstract: The authors reported for the first time the study of the interaction of amino alcohol benzoates $C_6H_5COCO(Ar)(R)(CH_2)_nNR_2'$ and a number of their analogs with butyryl cholinesterase (I.U.B. 3.1.1.8) (ChE). It was found as a result of preliminary experiments, that the character of the interaction of these substances with ChE depends on the structure of the amino alcohol group on Ar and R. Thus, esters of primary alcohols (Ar=R=H) are hydrolyzed by cholinesterase and display inhibitor properties only in concentrations of 10^{-4} -10^{-3} mol/l, while esters of secondary and tertiary alcohols (Ar=C$_6$H$_5$, R = H, C$_2$H$_5$) are not hydrolyzed at all by ChE and manifest inhibitor properties in concentrations of $\sim 10^{-6}$ mol/l. In a number of cases, it was found that the

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USSR

KUNDRYUTSKOVA, L. A., et al., Doklady Akademii Nauk SSSR, Vol 196, No 2, 1971, pp 352-355

hydrolysis rate of butyrylcholine (BuCh) in the presence of inhibitors does not depend on the time of their pre-incubation with ChE (1-20 min.), which confirmed the reversible inhibition character. A study was then made of the dependence of the reaction rate on the substrate (BuCh) and inhibitor concentration. It was found that the quantity V_0/V_I within the limits of experimental accuracy does not depend on the substrate concentration, which is characteristic of noncompetitive inhibition. It is suggested that effective inhibition requires a combination of reaction centers in one molecule, i.e. the inhibitor must be bifunctional in order to simultaneously be connected with the anion center and suppress deacylation.

2/2

1/2   015   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CHEMISTRY OF UNSATURATED ETHERS. XXX. DIENE CONDENSATION OF
1,ALKOXY,1,3,DIENES WITH CARBONYL COMPOUNDS. CONFIGURATIONS AND
AUTHOR-(05)-YABLONOVSKAYA, S.D., SHEKHTMAN, N.M., ANTONOVA, N.D.,
BOGATKOV, S.V., MAKIN, S.M.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 871-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIENE, CARBONYL COMPOUND, HETEROCYCLIC OXYGEN COMPOUND,
CATALYTIC HYDROGENATION, ISOMER, GAS CHROMATOGRAPHY, NMR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2087   STEP NO--UR/0366/70/006/004/0871/0877

CIRC ACCESSION NO--AP0125674
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0125674
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF ROCH:CHCH:CH
  SUB2 (R IS ME OR ET) WITH OHCCO SUB2 R PRIME1 (R PRIME1 IS ME, ET, OR
  BU) GAVE 2,RO,6,RO SUB2 C,DISUBSTITUTED,DELTA PRIME3,DIHYDROPYRANS (I).
  HYDROGENATION OF I OVER PTO SUB2 CATALYST GAVE THE TETRAHYDRO ANALOGS
  (II). I AND II ISOMERS ARE SEPD. BY GAS CHROMATOG.; NMR SPECTRA ARE
  DISCUSSED, THE TRANS ISOMERS, CONTG. AXIAL RO GROUPS, HAVE SHORTER
  RETENTION TIMES THAN THE CIS ISOMERS (DIEQUATORIAL CONFORMATION). THE
  THEORETICAL CALCNS. OF THE STABILITY OF THESE ISOMERS CONFIRM THE NMR
  DATA.   FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM.
  LOMCNOSOVA, MOSCOW, USSR.

Analysis and Testing

UDC: 539.214:620.175

BOGATOV, A. A., KOLMOGOROV, V. L., and MALYGIN, G. A., Ural Scientific
Research Institute of Ferrous Metals

"Experimental Testing of Metal Failure Conditions Under Various Loading Systems"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70,
pp 76-80

Abstract: The experiment involved specimens of Steel 20 (0.27% C; 0.22% Si;
0.63% Mn; 0.013 P, and 0.013 S) cut from a shell with a yield point of 56 to
64.0 kg/mm^2, tensile strength of 111.6 to 118.2 kg/mm^2, and reduction of area
of 46.1 to 52.5%. The condition of failure was

$$\Psi = \int_0^t B \frac{H(\eta)}{\Lambda_\rho [K(\eta)]} d\eta = 1,$$

where Ψ is the fracturing value, K is the state of stress index, Λ_ρ is
metal plasticity at a given state of stress, and B is the coefficient controlling

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BOGATOV, A. A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya
Metallurgiya, No 8, 70, pp 76-80

the vector properties of fracturing accumulation under various loading systems
of deformable metals. It was found that the assumed condition of failure is
valid for both constant and variable values of K in the process of loading. In
the event that (on deformation) the main stress tensor components are rigidly
connected with the material fibers, then coefficient B may be taken (with
sufficient accuracy) to be equal to unity. In the case that in the process
of loading there appears considerable deviation of the main stress tensor
components from the initially connected material fibers, then B is less than
1 and its value depends on the loading system.

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USSR   UDC: 621.7.011.001.57:539:385

BOGATOV, A. A.,and KOLMOGOROV, V. L., Ural Polytechnic Institute

"Condition for the Failure of Metals During Alternating Deformation With an Arbitrary Cycle Form"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 4, 1973, pp 102-105

Abstract: The authors propose a model for using the plasticity resource during cyclic deformation. The model takes into consideration the possibility of correcting a part of the defects, cracks, pores, etc. This model made it possible to determine the condition for the failure of metals during plastic deformation. The condition can be used for studying some complex types of pressure metal processing. The results show that the value for the degree of using the plasticity resource can fall between 0.79 and 1.17 in 95 out of 100 cases. The validity of the proposed model was verified by a series of cyclic tortion experiments with a random cycle form.

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Analysis and Testing

UDC: 539.214:620.179

BOGATOV, A. A., KOLMOGOROV, V. L., and MATVEYEV, G. A., Ural Scientific Research Institute of Ferrous Metals

"Experimental Testing of Metal Failure Conditions Under Various Loading Systems"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 76-80

Abstract: The experiment involved specimens of Steel 20 (0.27% C; 0.22% Si; 0.63% Mn; 0.013 P, and 0.019 S) cut from a shell with a yield point of 96 to 64.0 kg/mm^2, tensile strength of 111.8 to 118.2 kg/mm^2, and reduction of area of 46.1 to 52.5%. The condition of failure was

$$\psi = \int_0^t B \frac{H(\tau)}{\Lambda_\rho [K(\tau)]} d\tau = 1,$$

where ψ is the fracturing value, K is the state of stress index, Λ_ρ is metal plasticity at a given state of stress, and B is the coefficient controlling

1/2

BOGATOV, A. A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 8, 70, pp 75-80

the vector properties of fracturing accumulation under various loading systems of deformable metals. It was found that the assumed condition of failure is valid for both constant and variable values of K in the process of loading. In the event that (on deformation) the main stress tensor components are rigidly connected with the material fibers, then coefficient B may be taken (with sufficient accuracy) to be equal to unity. In the case that in the process of loading there appears considerable deviation of the main stress tensor components from the initially connected material fibers, then B is less than 1 and its value depends on the loading system.

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USSR   UDC 621.378.55

BOGATOV, A.P., YELISEYEV, P.G., PANTELEYEV, V.I., SHEVCHENKO, YE.G.

Abstract: A comparison is made of the spectra of the multimode generation of an
injection laser, obtained with averaging during not more than 10^{-10} sec
("instantaneous" spectrum) and during 10^5 pumping pulses ("average" spectrum).
A "Kontrol'-2" photoelectron recorder and a DFS-8 diffraction spectograph were
used for observation of spectra with a large resolving time. A number of models
of lasers based on heterostructures in the system GaAs--AlAs and operating at
300° K were studied. The data presented in the paper pertain to a diode with a
typical behavior for all the models studied which has a one-way heterostructure
and a Fabry--Perot resonator with a length of 347 micrometer and a width of 200
micrometer. A pulse of the pumping current had a duration of 200 nsec, a repe-
tition frequency of 5--500 Hz, and an amplitude up to 40 amp. With the presence
of deep pulsations of laser emission, the instantaneous spectrum in the separate
pulses strongly differs from the average and contains an arbitrary set of modes
of the number observed in the average spectrum. It is assumed that the random dis-

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USSR

tribution of photons with respect to the oscillation modes at the start of the
pulses predetermines the instantaneous generation spectrum. It is noted that dur-
ing the transition to a singlemode regime the spontaneous emission pulsations
disappear. Received by editors, 28 May 71. 3 fig. 7 ref.

2/2

USSR   UDC: 539.214:620.175

BOGATOV, A. A., KOZLOV, G. D., KOLMOGOROV, V. L., KROVSIKOV, R. P., and
PLAKHOTIN, V. S.

"Plasticity of Metals with Sign-Changing Deformation"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 83-86

Abstract: Experimental investigations and analytical methods were used to estab-
lish the regularity of the growth of plasticity of a number of types of steels
and nonferrous alloys under alternating deformation (twisting) with symmetrical
and pulsating cycles. The value of the Coffin factor was determined, and the
method of determining constant C in Coffin's formula was clarified. Data were
obtained on the plasticity of steel and nonferrous alloys with alternating deforma-
tion which can be used for the calculation of cracking under cyclical loading.
One illustration; six biblio. refs.

1/1

Acc. Nr: AP0051940

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol 69, Nr 2 , pp 163-165

MITOTIC INDICES OF INDIVIDUAL TYPES OF THE BONE-MARROW CELLS OF THE NORMAL RATS

L. V. Bogatov

Institute of Biophysics, Moscow

The Wistar rats weiging 150 gm were assayed for mitotic index (MI) of individual types of the marrow cells and for mitotic index of red and white cells capable of division. As evidenced from examination of 1000 cells capable of division, MI is 62.8 for the red cells and 41.3, for the white cells. For individual types of cells, mitotic index was determined as follows: reticular cells — 19.5, hemocytoblasts — 83.0, erythroblasts — 110, basophilic normoblasts — 46.0, polychromatophylic normoblasts — 45.0, myeloblasts — 135.5, promyelocytes — 56.4, myelocytes — 26.4, eosinophilic promyelocytes and myelocytes (in the total) — 56.0. Distribution of mitoses, according to phases, was given. While the total amount of nucleus-containing cells in the femur bone marrow was $(132.5 \pm 5.35) \cdot 10^6$, the absolute figure of dividing cells, calculated with regard to the myelogramm, was found about 2%.

REEL/FRAME

19820423

B

USSR   UDC 546.621'86:539.233

PALATNIK, L. S., BOGATOV, P. N., MANENKOVA, V. Ye., TOVSTONOG, V. A., and
SHVYDKIY, I. D., Khar'kov Polytechnical Institute imeni V. I. Lenin

"Preparation and Properties of Condensed AlSb Films"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 6, No 6,
Jun 70, pp 1080-1089

Abstract: Results are reported on an investigation of the electrical properties
of condensed thin films (thickness, 3-30μ) produced by a method previously
described by one of the authors (Palatnik). AV000 aluminum and Sy1 antimony
were used for the preparation of AlSb. An analysis of the condensation films
that when the method of synchronous condensation of the elements of the com-
pound is used, films prepared at temperatures ≥ 500° C have semiconductor
properties and the compound produced is close to the stoichiometric.

1/1

USSR

BOGATOV, S. V., ZHURAVKOV, V. O.

"Problems and Exercises on Mathematical Programming"

Zadachi i Uprazhneniya po Matematicheskomu Programmirovaniyu [English
Version Above], Kaliningrad, 1970, 104 pages, (Translated from Referativnyy
Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V390K).

NO ABSTRACT.

USSR   UDC: 620.193.6

BARBASHEV, Ye. A., BOGATOV, V. A., PANSHIN, B. I.

"Influence of Proton Bombardment in a Vacuum on Properties of Polymer Films"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 6, 1972, pp 66-68.

Abstract: This article presents a study of the effects of proton bombardment on polymer films. The study was performed using films of polyethylene terephalate 20 µ thick and polyvinyl chloride films 200 µ thick. Tensile-test specimens were bombarded in a vacuum by protons at 200 KeV energy produced by an accelerator at 0.014, 0.028 and 0.14 µa/cm^2 density, maximum flux $0.8 \cdot 10^{15}$ protons per square centimeter. Proton bombardment causes both the strength and elongation of the films at rupture to decrease. The effect of radiation decreases with increasing specimen material thickness. Gas chromatography of the specimens before and after bombardment indicated that acetaldehide is formed upon bombardment of PETP films, which could occur only by rupture of the bonds in the main chain, i.e., destruction of the material.

1/1

UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--CARBONYL COMPOUNDS AND THEIR ROLE IN THE AROMA OF FRUITS AND
BERRIES -U-

AUTHOR-(04)-PISARNITSKIY, A.F., VERESHCHAGIN, P.V., MACHAROSHVILI, G.I.,
BOGATOVE, YE.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(1), 13-17

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP, CHEMICAL ANALYSIS, CARBONYL COMPOUND, PAPER
CHROMATOGRAPHY, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0895   STEP NO--UR/0411/70/006/001/0013/0017

CIRC ACCESSION NO--AP0055593
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0055593   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF VOLATILE CARBONYL
COMPDS. IN RASPBERRIES AND STRAWBERRIES AT DIFFERENT RIPENING STAGES,
AND THEIR CONTENT IN MATURE FRUITS WERE DETD. THEY WERE SEPD. AS
2,4-DINITROPHENYLHYDRAZONES BY PAPER CHROMATOG. THE MAIN CHANGES
NOTICED DURING THE MATURIZATION PROCESS WERE THE SYNTHESIS OF PHCHO AND
THE DISAPPEARANCE OF HEXANAL AND HEXENE-2-AL.

USSR

BOGATSKAYA, I. G., KLIMOV, D. M., and SLEZKIN, L. N., Moscow

"The Effect of the Ovality of Suspension Elements on the Accuracy of a Gyroscopic Integrator of Linear Accelerations"

Abstract: The authors study the motion of a gyroscopic integrator of linear accelerations in the presence of ellipticity of support elements acting as the suspension for the gyroscope housing. The case is considered where the acceleration being integrated by the device is constant and its direction constitutes a constant angle with the axis of the external frame of the device, for example where the unit is set on the earth at an angle lamba to the plane of the horizon. A formula is derived for the relative error of indication of a gyrointegrator.

1/1

1/2   007   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--STEREOCHEMISTRY OF HETEROCYCLES. IV. 2,SUBSTITUTED
  5,ALKYL,1,3,DITHIANES -U-
AUTHOR-(05)-VOSTROVA, L.N., SOMCHINSKAYA, V.N., BOGATSKAYA, Z.O.,
   MAMONTOV, V.P., DAVIDENKO, T.I.
COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (4), 462-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, HETEROCYCLIC SULFUR COMPOUND, ORGANIC
   SYNTHESIS, BROMINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0935   STEP NO--UR/0409/70/000/004/0462/0465

CIRC ACCESSION NO--AP0134662
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0134662
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY THE METHOD OF BOGATSKAYA (1962)
  WERE SYNTHESIZED CH SUB2 BRCHRCH SUB2 R (R, B.P., D PRIME20, N PRIME20
  SUBD, AND PERCENT YIELD GIVEN): SHOWN ON MICROFICHE.   FACILITY:
  ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

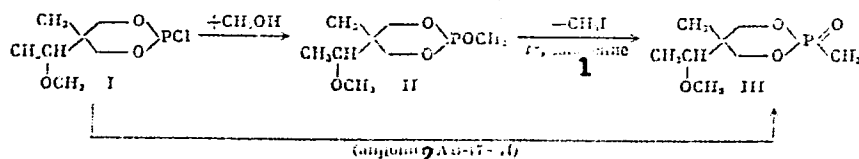USSR   UDC 547.26'118

BOGATSKIY, A. V., BUTOVA, T. D., and KOLESNIK, A. A., Odessa State University imeni I. I. Mechnikov

"A New Arbuzov Rearrangement Variant"

Abstract: A previous article by the authors described the conversion of cyclic phosphite II to compound III as a result of an ordinary Arbuzov rearrangement (by the action of CH_3I and II with heating and under pressure) The present article shows that compound III can be obtained directly from acid chloride I by the action of methanol in the presence of anion-exchanger AV-17-P in hydroxyl form. The reaction occurs at atmospheric pressure and at $-5°$, yield 70 percent.

1/2

USSR

BOGATSKIY, A. V., et al., Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1875

Key: 1. Pressure 2. (anion-exchanger AV-17-P)
Other type I acid halides react sinilarly. The study of the conversion mechanism is continuing.

USSR   UDC 547.87+547.26'118

BUTOVA, T. D., KOLESNIK, A. A., and BOGATSKIY, A. V., Odessa State
University imeni I. I. Mechnikov

"Alkoxy Compounds. Part 44. Synthesis of Some Alkoxyalkyl-Substituted
2-Oxo-1,3,2-dioxaphosphorinane Amides"

Abstract: This study was prompted by interest in the chemistry of sub-
stituted phosphoric acid amides and by the nearly complete lack of infor-
mation on cyclic compounds of this type. This is the first report on the
synthesis of 2-amino-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphosphorinanes
by the reaction of 2-chloro-2-oxo-5-alkyl-5-methoxyalkyl-1,3,2-dioxaphos-
phorinanes (alkyl radicals:methyl, ethyl and isopropyl) with diethylamine,
dimethylamine, morpholine and ethylenimine. The obtained compounds are
extremely unstable and readily decompose on distillation under vacuum.
Their structures are supported by IR spectra showing absorption bands at
1239 cm^{-1} characteristic of the P=O bond and at 810 cm^{-1} typical of the
P-N bond. The properties of the new compounds are given in tables.

1/1

TITLE--ALKOXY COMPOUNDS. XLII. REACTION OF SODIUM ALKYLMALONIC ESTERS WITH
   ALPHA CHLOROBUTYL METHYL ETHER AND SOME REACTIONS OF ALKYLALPHA

PROCESSING DATE--27NOV70

AUTHOR-(04)-CHUMACHENKO, T.K., KAMALOV, G.L., BOGATSKIY, A.V., GREN, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 846-54

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MALONIC ESTER, ORGANOSODIUM COMPOUND, CHLORINATED ORGANIC
   COMPOUND, METHYL ETHER, ALCOHOL, IR SPECTRUM, HYDROGEN BONDING,
   HYDROLYSIS, CHEMICAL REDUCTION, METHOXY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1484   STEP NO--UR/0079/70/040/004/0846/0854

CIRC ACCESSION NO--AP0135148
                       UNCLASSIFIED

CIRC ACCESSION NO--AP0135148
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF SODIO MALONIC ESTERS
   WITH PRCHCLOME GAVE (SHOWN ON MICROFICHE).   SAPON. WITH AQ. ALC. KOH
   GAVE MIXTS. OF MONO ET ESTERS AND FREE ACIDS, WITH THE LATTER
   PREDOMINANT FOR THE ME MEMBER ONLY; THE FOLLOWING PRCH(OME)CR(CO SUB2 H)
   SUB2 WERE REPORTED: ME, M. 102DEGREES; ET, M. 129DEGREES; AND PR, M.
   156DEGREES.   THE ABOVE DI-ET ESTERS WERE HEATED 8 HR WITH 30PERCENT ALC.
   KOH GAVE MIXTS. OF ET ESTERS OF THE INDICATED CARBOXYLIC ACIDS IN WHICH
   THE RELATIVE AMTS. OF THE UNSATD. MEMBERS TENDED TO INCREASE WITH THE
   MOL. WT. OF THE ACIDS; CAREFUL FRACTIONATION YIELDED THE PURE
   COMPONENTS: (SHOWN ON MICROFICHE).   VAPOR PHASE HYDROLYSIS OF THE
   ESTERS OVER AL SUB2 O SUB3 GAVE FREE PRCO SUB2 H, C SUB5 H SUB11 CO SUB2
   H, ETMECHCO SUB2 H, AND THEIR ET ESTERS FROM THE SUBSTITUTED MALONATES,
   AND THE PROCESS RUN IN THE 250-370DEGREES INTERVAL ALSO GAVE MIXTS. OF
   UNSATD. AND ALKOXYLATED ACIDS AND ET ESTERS.   REDN. OF THE MALONATES
   WITH LIALH SUB4 GAVGAVE (SHOWN ON MICROFICHE).   THE ESTD. VALUES OF
   LENGTHS OF H BONDS IN THESE DIOLS WERE TABULATED FROM IR MEASUREMENTS;
   THE ENERGY OF THE INTRAMOL. BOND WAS ESTD. AT 3.5-4 KCAL PER MOLE AND
   THAT OF THE INTERMOL. BOND 8 KCAL PER MOLE IN THESE DIOLS.

UNCLASSIFIED

1/2   012   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--1,4,BENZODIAZEPINES AND THEIR DERIVATIVES. III. SYNTHESIS AND
  CORRELATION BETWEEN THE STRUCTURE AND PHARMACOLOGICAL ACTIVITY OF
AUTHOR-(05)-BOGATSKIY, A.V., VIKHLYAYEV, YU.I., ANDRONATI, S.A., KLYGUL,
  T.A., CHUMACHENKO, T.K.
COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 5-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRANQUILIZER, ANTICONVULSANT DRUG, MUSCLE RELAXANT, HYPNOSIS,
  CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0540   STEP NO--UR/0450/70/004/001/0005/0009

CIRC ACCESSION NO--AP0137629
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0137629
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF PHARMACOL. TESTS
WERE GIVEN FOR 14 DERIVS. OF 1,3,DIHYDRO,(2H),1,4,BENZODIAZEPIN,2,ONE
SYNTHESIZED EARLIER (ANDRONATI AND BOGATSKII, 1969).   DETAILS OF IR
SPECTRA WERE ALSO REPORTED. ALL THE COMPDS. COMBINED TRANQUILIZING,
ANTICONVULSANT, MUSCLE RELAXING, AND HYPNOTIC ACTIVITIES; SOME OF THEM
REVEALED ALSO SEDATIVE ACTIVITY.   DISORDERS OF THE MOTOR ACTIVITY WERE
OBSD. IN CERTAIN CASES.   FACILITY: ODESS. UNIV. IM. MECHNIKOVA,
ODESSA, USSR.

UNCLASSIFIED

TITLE--CONFIGURATIONS AND CONFORMATIONS OF SUBSTITUTED OXETANES -U-

AUTHOR-(03)-SAMITOV, YU.YU., BOGATSKIY, A.V., FILIP, G.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(1), 138-41

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, ISOMER, PROTON MAGNETIC RESONANCE, BUTANE,
    PROPANE, ORGANIC OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1877   STEP NO--UR/0020/70/192/001/0138/0141

CIRC ACCESSION NO--AT0132139
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0132139
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PMR SPECTRA WERE SHOWN FOR
  2,METHYLOXETANE (I), 2,3,DIMETHYLOXETANE (II), AND
  2,METHYL,3,ISOBUTLOXETANE (III) STEREOISOMERS.   IT WAS CONCLUDED THAT I
  EXISTS WITH SOME STABILIZATION OF THE NONPLANAR FORM OWING TO EXISTENCE
  OF ECLIPSED INTERACTIONS IN THE PLANAR FORM; SINCE THERE IS ALSO A
  COMPETITION BETWEEN THE SADDLE FORMS WITH VARYING DEGREE OF ANGLE
  DISTORTION, IT WAS CONCLUDED THAT I HAS PROBABLY THE INTERMEDIATE SADDLE
  CONFORMATION WITH ABOUT A 150DEGREE ANGLE.   IN II THE STABLEST FORM IS
  THE TRANS ISOMER WITH A SADDLE ANGLE OF 150DEGREES.   THE LOWER BOILING
  ISOMER OF II EXISTS LONGER IN THE DIPSEUDOEQUATORIAL FORM OF DEEPER
  SADDLE CONFORMATION AND MUST BE THE TRANS ISOMER.   THE PSEUDOEQUATORIAL
  H ATOM IS SHIELDED MORE THAN IS THE PSEUDOXIAL PROTON IN THE CASE OF THE
  LOWER BOILING ISOMERS OF II AND III; THE SPECTRA OF THE HIGH BOILING
  ISOMERS OF II AND III INDICATE EQUIVALENCE OF PROTONS H SUBA AND H SUBB,
  POSSIBLE ONLY FOR THE CIS ISOMERS.   FACILITY: INST. ORG. FIZ.
  KHIM., KAZAN, USSR.

UNCLASSIFIED

TITLE--SYNTHESIS OF SOME ALKYLAMINO SUBSTITUTED 1,3,DIOXANES -U-

AUTHOR-(03)-BOGATSKIY, A.V., DROZDOVSKAYA, A.I., REZNIK, S.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(2), 233-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, AMINE, DIOXANE, IR SPECTRUM, FORMALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1062   STEP NO--UR/0063/70/015/002/0233/0234

CIRC ACCESSION NO--AP0128489
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0128489
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING 0.31 MOLE PARAFORMALDEHYDE
  AND 1 MOLE ISO,BUCHO WITH 0.71 MOLE OF THE REQUISITE AMINE 3-5 HR AT
  100DEGREES GAVE 40PERCENT ME SUB2 NCH SUB2 CME SUB2 CHO, B SUB17
  44DEGREES, D PRIME20 0.8568, N PRIME20 SUBD 1.4245; AND 47PERCENT ET
  SUB2 NCH SUB2 CME SUB2 CHO, B SUB7 51-2DEGREES, 0.8565, 1.4340. THESE
  CONDENSED WITH, RESP., 3,ETHYL,2,4,PENTANEDIOL AND
  2,ETHYL,2,METHOXYMETHYL,1,3,PROPANEDIOL IN THE PRESENCE OF P,MEC SUB6 H
  SUB4 SO SUB3 H CATALYST IN REFLUXING C SUB6 H SUB6 WITH REMOVAL OF
  RESULTING H SUB2 O, GAVE: 6PERCENT,
  2,(2,DIMETHYLAMINO,1,1,DIMETHYLETHYL) 4,6,DIMETHYL,5,ETHYL,1,3,DIOXANE,
  B SUB5 62-5DEGREES, 0.9029, 1.4335; AND 6PERCENT
  2,(2,DIETHYLAMINO,1,1,DIMETHYLETHYL),5,METHOXYMETHYL,5,
  ETHYL,1,3,DIOXANE, B SUB5 73-4DEGREES, 0.9611, 1.4375. IR SPECTRA WERE
  DESCRIBED.   FACILITY: ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA,
  USSR.

UNCLASSIFIED

1/2   006   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ALKOXY COMPOUNDS. 36. ADDITION OF MONOCHLOROMETHYL METHYL ETHER TO
  ALLYL,ALPHA,ALKOXYETHYLMALONIC ESTERS AND
AUTHOR-(02)-BOGATSKIY, A.V., GREN, A.I.

COUNTRY OF INFO--USSR

SOURCE--URK. KHIM. ZH. 1970, 36(2), 186-90

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKOXIDE, MALONIC ESTER, DIOXANE, ETHER, HETEROCYCLIC OXYGEN
  COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1973   STEP NO--UR/0073/70/036/002/0186/0190

CIRC ACCESSION NO--AP0125562
                    UNCLASSIFIED

CIRC ACCESSICN NO--AP0125562
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (CF. CA 68: 129150). CH
   SUB2:CHCH SUB2 C(CHMEOR)(CO SUB2 ET) SUB2 AND MEOCH SUB2 CL IN THE
   PRESENCE OF ZNCL SUB2 FORMED THE FOLLOWING (SHOWN ON MICROFICHE).   ALL
   OF THE ADDNS. ARE IN THE MARKOVNIKOV SENSE.   FACILITY: ODESS.
   GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

TITLE--SOLUBILITY AND SELECTIVE DISSOLUTION OF OXIDIZED NICKEL COMPOUNDS
-U-

AUTHOR-(02)-BOGATSKIY, D.P., MINEYEVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 83-7

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY

TOPIC TAGS--NICKEL COMPOUND, MINERAL, LEACHING, IRON ORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0156   STEP NO--UR/0370/70/000/001/0083/0087

CIRC ACCESSION NO--AP0054952
                        UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOLN. OF NI WAS STUDIED BY LEACHING NIO, NI SUB2 O SUB3, NIO PLUS NI SUB2 O SUB3 SOLID SOLNS., AND SILICEOUS NI CONTG. MINERALS AND ORES WITH H SUB2 SO SUB4, HCL, HNO SUB3, AND SOLNS. OF FECL SUB3 AND FE SUB2(SO SUB4)SUB3. THE DEPENDENCES ON ACID CONCN. (0.1N-20PERCENT), FERRIC SALT CONCN. (5.8-65 G-L), TEMP. (10-100DEGREES), AND LEACHING TIME (15 MIN 40HR) ARE GIVEN. ONLY SEVERAL PERCENT NI WAS DISSOLVED AT ROOM TEMP. UNDER THE MOST FAVORABLE CONDITIONS. ABOUT 40-60PERCENT NI FROM THE SILICEOUS ORES WAS DISSOLVED BY 3PERCENT H SUB2 SO SUB4 AT 98-100DEGREES; FE IS DISSOLVED AT THE SAME TIME. THE HIGHEST YIELDS WERE OBTAINED BY LEACHING WITH A SOLN. CONTG. 30-65 G FE SUB2(SO SUB4)SUB3-L. AT 98-100DEGREES FOR 6-20 HR. NI IS GREATER THAN 90PERCENT IS OBTAINED FROM MG-NI HYDROSILICATES AND HYDROALUMINOSILICATES AND FROM ORES CONTG. THESE MINERALS. CO IS DISSOLVED AS WELL. THIS METHOD IS NOT SUITABLE FOR MINERALS CONTG. NIO OR OTHER OXIDES WHICH DO NOT FORM SILICATES; ONLY 30PERCENT NIO IS DISSOLVED UNDER THE SAME CONDITIONS. SOLNS. OBTAINED BY LEACHING NI FE ORES WITH H SUB2 SO SUB4 CAN BE USED AS THE LEACHING AGENT.

UNCLASSIFIED

TITLE--ELIMINATION OF CERTAIN ADMIXTURES IN THE PROCESS OF ISOLATION AND
  CHEMICAL PURIFICATION OF STREPTOMYCIN -U-
AUTHOR-(04)-BOGATSKIY, M.A., VISHNEVSKIY, V.M., YAKHONTOVA, L.F., BRUNS,
  B.P.
COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 406-411

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOMYCIN, CHEMICAL PURIFICATION, FERMENTATION, CATION
  EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS .

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0154   STEP NO--UR/0297/70/015/005/0406/0411

CIRC ACCESSION NO--AP0114550
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0114550
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF ELIMINATION OF
  CERTAIN ADMIXTURES, SUCH AS MAGNESIUM, STREPTIDINE AND STREPTOBIOZAMINE
  PRESENT IN STREPTOMYCIN FERMENTATION BROTH FILTRATES DURING THE
  ANTIBIOTIC SORPTION BY CARBOXYLIC CATION EXCHANGE RESINS WAS STUDIED.
  IT WAS SHOWN THAT THE EFFICACY OF ELIMINATION OF THE ADMIXTURES SORBED
  BY THE RESINS DEPENDED ON THE SOLUTION COMPOSITION USED FOR THEIR
  SORPTION. THE STAGE OF THE ADMIXTURE SORPTION WAS IMPROVED.
  FACILITY: KIEV PLANT OF MEDICAL PREPARATIONS, NATIONAL INSTITUTE FOR
  ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

USSR   UDC 617.51/.52-001.29-059

BOGATSKIY, V. A., Central Institute for the Advanced Training of Physicians
and Central Scientific Research Institute of Stomatology

"Experience With the Surgical Treatment of Late Radiation Lesions"

Moscow, Stomatologiya, No 1, 1972, pp 33-34

Abstract: The author operated on 56 patients who had developed lesions of the
soft tissues and bones of the face after receiving radiation for tumors and
fungus diseases. The patients were divided into four groups according to the
depth of injury to the soft tissues and adjacent bone. Group 1 (4) with under-
developed facial skeleton or atrophy of the soft tissues had contour repair
operations with implants of elastic plastic. Group 2 (17) with scars and
deformities of different parts of the face and head underwent radical excision
of tissue with the resulting defects covered. Group 3 (16) with ulcers under-
went extensive and deep excision of tissue with subsequent covering of the
defects. In group 4 (19) with radiation-induced osteomyelitis and necrosis,
surgery was directed at removal of the affected portions of the bones within
healthy tissue. Abandonment of the policy of watchful waiting in favor of
early surgical intervention is recommended.
1/1

1/2   012   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--DETERMINATION OF THE INTRINSIC VISCOSITY OF POLYETHYLENE SOLUTIONS
-U-

AUTHOR-(05)-RYAZANTSEV, V.I., KONDRATYEV, A.A., SISIN, M.F., NASYROVA,
Z.M., BOGATYKH, K.F.
CCUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 954-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTRINSIC VISCOSITY, POLYETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0663   STEP NO--UR/0459/70/012/004/0954/0956

CIRC ACCESSION NO--AP0124335
                         UNCLASSIFIED

2/2   012   UNCLASSIFIED   PROCESSING DATE--30OCT7(
CLRC ACCESSION NC--AP0124335
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE 0.4-2.3 DL-G RANGE THE
  REDUCED VISCOSITY (N-C) OF POLYETHYLENE (I) SOLNS. IN P EXLENE CHANGES
  LINERALY WITH I CCNCN. (C); THE HUGGINS CONSTS WAS 0.62.
  FACILITY: UFIM. NEFT. INST., UFA, USSR.

UNCLASSIFIED

USSR   UDC 593.374

ANDREYEV, L. V., KHMELOVSKIY, L. T., BOGATYR', G. P., PTAKHIN, Ye. A.,
Dnepropetrovsk

"The Problem of Stability of Cylindrical Shells Beyond the Limits of Elasticity"

Abstract: Results are presented from experimental studies of the stability
of cylindrical shells made of AMg6 alloy under axial compression and lateral
external pressure with various R/h and R/L ratios. A comparison is presented
with known theoretical solutions from the theory of small elastic-plastic
deformations and the theory of flow. Good agreement is achieved with calcu-
lations based on a geometrically linear theory of deformations.

1/1

USSR

UDC 621.165:681.14

BOGATYRENKO, K. I., IL'CHENKO, O. T., and PROKOF'YEV, V. Ye.

"Analog Computer Determinations of Elongations and Mutual Dislocations of the Rotor and the Body of a Steam Turbine"

Energ. Mashinostroyeniye. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Power Engineering. Republic Interdepartmental Thematic Scientific-Technical Collection], No 13, 1972, pp 77-81 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49.42)

Translation: An account is given of the analog computer method of solution of problems of determinating elongations and mutual dislocations of the rotor and the body of steam turbines. The facility for the solution of these problems, assembled from elements of the USM-1 machine, is described. Results are presented of the determination on the basis of a model of the elongation of the heated shaft and of mutual dislocations of coaxial cylinders. Three illustr. Two biblio. refs.

1/1

AN0027863

UR9013

AUTHOR-- BOGATYR, T., CHIEF, ADMINISTRATION OF THE HYDROMETEORO-
LOGICAL SERVICE OF THE UKRAINIA S.S.R.

TITLE-- THE UKRAINIAN HYDROMETEOROLOGICAL SERVICE

NEWSPAPER-- PRAVDA UKRAINY, FEBRUARY 25, 1970, P 2, COLS 4-7

ABSTRACT-- THE UKRAINIAN HYDROMETEOROLOGICAL SERVICE MAINTAINS
METEOROLOGICAL MARINE, HYDROLOGICAL, LAKE, AEROLOGICAL, RUN OFF,
SWAMP, WATER BALANCE, AND AGROMETEOROLOGICAL STATIONS, ALSO
HYDROLOGICAL AND METEOROLOGICAL POSTS. ONLY IN SOVNARKHOZES AND
SOVKHOZES OF THE REPUBLIC THE SERVICE RUNS SOME 11,000 SUCH POSTS.

WEATHER BUREAUS IN KIYEV AND ODESSA, HYDROMETEOROLOGICAL OBSERVA-
TORIES, REGIONAL HYDROMETEOROLOGICAL OBSERVATORIES AND AVIATION
METEOROLOGICAL STATIONS FURNISH WEATHER FORECAST TO NATIONAL
ECONOMY.

19671148

12

AN0027863

THE WEATHER BUREAU OF THE BLACK AND AZOV SEAS IN ODESSA, THE
HYDROMETEOROLOGICAL OBSERVATORY OF THE BLACK AND AZOV SEAS IN
SEBASTOPOL, AND THE ZHDANOV HYDROMETEOROLOGICAL BUREAU AND THE
AVIATION METEOROLOGICAL STATION IN KERCH SERVE THE MERCHANT MARINE
AND FISHING FLEETS.

THE HYDROMETEOROLOGICAL RESEARCH IS CONDUCTED BY A RESEARCH INSTITUTE
IN KIYEV.

19671149

USSR

UDC 533+536.423.1

BOGATYREV, A. F., KOSOV, N. D., MAKLETSOVA, Ye. Ye.

"Barometric Effect of a Binary Helium-Argon Mixture in the 290-800°K Temperature Range"

V sb. Fizika (Physics -- Collection of Works), No 5, Alma-Ata, 1971, pp 94-96 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye46)

Translation: The magnitude of the barometric effect arising in gases under nonisothermal conditions was measured. Measurements were made for pure He and four binary mixtures of He with Ar over a wide range of temperatures and pressures. The magnitude of the barometric effect was compared with formulas obtained from elementary kinetic theory. A comparison between theory and experiment shows that they agree within 10%. Authors' abstract.

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USSR

UDC: 681.3.06:51

BOGATYREV, A. I.

"Modeling of the Structure and Operational Process of an Information System"

V sb. Nauch. i prakt. probl. bol'shikh sistem. Sekts. Bol'shiye sistemy. Teoriya, metodol., modelir. (Scientific and Practical Problems of Large Systems--collection of works. Large Systems Section. Theory, Methodology, Modeling), Moscow, "Nauka", 1971, pp 300-311 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V929)

Translation: This paper deals with one of the possible approaches to investigation of the structural and functional properties of complex information systems of a special form (the All-Union Institute of Scientific and Technical Information type). The approach is based chiefly on the formalism of queuing theory; an aggregate method is used for studying certain general properties. Author's abstract.

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Radiobiology

USSR

SVERDLOV, A. G., MARTYNCHIK, Yu. F., BOGATYREV, A. V., and YARKOVETS, A. G.

"The Effect of Increased Atmospheric Pressure on the Protective Effect of Some Radioprotectors"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

Abstract: Although the mechanism of chemical protection against ionizing radiation is still unexplained, the prevailing hypothesis implicates the hypoxic effect of basic radioprotectors. Yet there is mounting evidence that does not correspond to this hypothesis, including results of research on the protective effectiveness of radioprotectors in conditions of increased oxygen partial pressure (pO_2) in tissues. The protective effectiveness or radioprotectors of various classes was studied under conditions of increased atmospheric pressure, and the effect of radioprotectors on pO_2 in mouse spleen and muscle was observed. The dose power of Co^{60} irradiation was 9.9 r/min. Doses of 1,000 r ($DL_{80}/30$) were administered. Twenty percent of the mice survived, apparently because of prolonged irradiation (101 min). The muscle and spleen pO_2 were measured during irradiation in batches of 20 mice. The mice were closely confined, obviating tying and narcosis. Indicators were 1/3

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platinum electrodes, open type, 0.2 mm in diameter, inserted in the hip muscle and spleen: inert silver chloride electrons were inserted into the rectum. Radioprotectors were intraperitoneally injected in the following mg/kg doses: mexamine 50; cystamine 150; cystaphos 350, aminoethylisothiuronium (AET) 150. Pressure was increased after 10 minutes. Irradiation was begun in the 6th min at 7 atm. After injection of protectors into the spleen, changes in pO_2 levels occurred which were specific for each preparation. Mexamine, in the first 10 minutes, produces pO_2 decrease of 50% and cystamine and AET -- 30%, while cystaphos slightly raises pO_2 by about 5%. As pressure increased, tissue pO_2 also increased. The pO_2 increase continues for 5-10 minutes at a maximum, exceeding initial values 2-3 times, and remains at this level. During decompression pO_2 shifts are reversed, so that at normal atm spheric pressure the pO_2 returns to initial level. This suggests that the hypoxic action of the radio protector is masked by increased atm spheric pressure, but can again be observed at normal pressure. Test results for muscle are analogous to those for the spleen. It was found that the protective effect 2/3

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